DOCUMENT RESUME

ED 102 248 UD 014 782

TITLE	Research for New School Programs: A Guide for Program Planners.
INSTITUTION	Center for New Schools, Inc., Chicago, Ill.
SPONS AGENCY	Illinois State Office of the Superintendent of Public Instruction, Springfield. Illinois Network for School Development.
PUB DATE	20 Jul 73
NOTE	31p.
EDRS PRICE	MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS	Data Analysis; Educational Planning; *Educational Programs; *Educational Research; Experimental Programs; *Guides; Measurement Techniques; Pilot Projects; Program Development; *Program Planning; Program Proposals; Public Schools; *Research Methodology; Research Utilization

ABSTRACT

This research guide is designed to help people who are working on the development of new educational programs for public schools. By outlining some of the major questions and problems that relate to research of new programs and by suggesting some practical steps, this guide attempts to aid planning groups in the use of research techniques. Research requires consideration of how information is collected and analyzed. The researcher considers the effect of the research approach itself on his conclusions. Before developing a research plan, the basic reasons for doing the research must be clarified. Once the overall questions of the research are clear the next step is to determine what approaches to the collection, analysis, and presentation of information will most productively lead to the research goals. The uses, limits, and costs in terms of time and money are indicated for each approach discussed here as well as some suggestions for implementing that approach. Once the information is collected, the analysis of the information will determine the quality of the conclusions. Much of the best analysis of new school programs has been done by program participants who have had no formalized training in research. The choice of how to present research conclusions should be based on your audience as well as the purpose for presentation. (Author/JM)

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RESEARCH FOR NEW SCHOOL PROGRAMS: A Guide for Program Planners

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July 30, 1973

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July 30, 1972

TO: Dr. Michael J. Bakalis
Superintendent of Public Instruction
State of Illinois

Dear Dr Bakalis:

In partial fulfillment of the terms of our contract with the Office of the Superintendent of Public Instruction, Center for New Schools respectfully submits Research for New School Programs: A Guide for Program Planners.

This guide was developed on the premise that aiding planning groups to develop competencies in research will facilitate the process of improving the quality of public education. We are convinced from our work that local community planning groups have the abilities to carry out productive research. They need to learn some specific methodological techniques and need to be encouraged to step into areas that they fear belong only to the experts. We hope that this guide serves that purpose for both the Affiliates of the Illinois Network for School Development and for other local groups in the state concerned with improving education.

Sincerely,

Richard Johnson
Donald R. Moore
Thomas A. Wilson

Executive Associates
Center for New Schools

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I. INTRODUCTION

This research guide is designed to help people who are working on the development of new educational programs for public schools. It has not been designed to be a comprehensive guide to researchers. Rather, by outlining some of the major questions and problems that relate to research of new programs and by suggesting some practical steps, this guide attempts to aid planning groups in the use of research techniques.

It is written from the Center for New Schools' extensive experience in helping plan, implement and research new school programs. We have worked with both the theory and application of educational research techniques within the context of planning and implementing new educational programs. This work includes a comprehensive research project as part of our work in helping to establish an alternative urban public high school, and several more limited evaluation projects of new school programs in the Midwest. Our work has been supported by the University of Illinois, the National Institute for Education, the National Institute for Mental Health, and the Carnegie Foundation.

Our approach to research has been developed to aid the process of setting up and then continually improving a new educational program. We have become convinced through our work that much of the traditional wisdom about education research may not very helpful to program planners. We think it is important that research be designed to meet the needs of the planners as opposed to the research fraternities. We hope that this guide will help program planners by using some of the tools that we have become accustomed to our work and by suggesting some practical steps about research that we have found effective.

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evaluate a [illegible] plan, three important questions to be answered before it the process, [illegible] the ability of the researcher to explain clearly to others how the chosen plan [illegible] clearly.

Before developing a research plan, the basic reasons for doing the research must be clarified. Much useless research might have been avoided if someone had seriously asked the researcher before he started "Why do you want to know that?" or "If your project works out as you plan, what good will it do?"

The questions for which answers are wanted and the [illegible] for collecting the information to answer the query also must be judged in terms of the basic purpose for doing the research. Deciding the purpose for collecting the information will directly shape the decision about how to collect that information. The following examples illustrate how the research purpose affects the whole plan.

1. By [illegible] study. One group of planners working on a new program to increase student reading ability decided the thing that they wanted to know most was the effect of their program on students' reading scores on standard tests. They selected a series of reading tests which were administered to the students before entering and after completing the program. They compared the students' scores to see if scores had improved and were able to judge the program's success.
2. [illegible] the program to [illegible]. Many concerned planners have a great fear and dislike of their program to an outside group which will affect or control the program, such as a board of education. One such group decided that the board wasn't [illegible] clearly to program innovations. If the

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a person who has learned auto mechanics by watching and doing, but has not learned to read auto manuals or written instructions, would get a low score on an achievement test because he was required to read. In fact, his reading skill and not his actual skill in mechanics was being tested.

- Standardized tests are inflexible in terms of content because they are not designed for the goals of a particular learning program. Rather they are designed to be standard in their content, and therefore may not be able to test the specific skills for which an experimental program was designed.
- Standardized tests were not designed to be sensitive to individual changes in performance over a short period of time. In fact they have been designed to be stable over short periods of time. Questions that might measure changes have been systematically weeded out of a standardized test.
- Success on standardized tests is viewed as very important by many teachers, students and parents. Consequently, the use of these tests often influences how teachers teach and how curriculum is designed.

2. Costs:

Achievement tests are cheap. Standardized tests which must be bought cost only a few cents apiece. Costs for scoring and for analyzing standardized tests are also low because procedures have been carefully developed and often are available on a computer. Frequently, the cost of the test includes the expense of scoring and analysis of tests results. Finally, tests are administered cheaply and a teacher or a parent can administer them with little training. Unfortuantely, because of their low costs many groups are using tests even though they may not be appropriate for their particular research goals.

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4. Suggestions for using achievements tests:

Because the nature of the test itself determines the information that will be collected, the test is key. Many tests are available and it would be advisable to locate those tests that most clearly reflect the goals of the program. The regular school system testing program should be evaluated in terms of program and research goals. Before selecting a test, read and complete the test as if you were a student taking it. The actual content of a test may differ from your impression of what the test measures from the description of the test. Consider if the questions are appropriate not only to the learning goals but also to the students being tested.

- Achievement test information is probably the most effective tool for convincing outside groups such as boards of education that your program is worthy. Test scores are often considered "more objective" than other types of information. The difficulty that this presents for program implementers is that most achievement tests are designed not to be influenced on the short term by programs.
- Frequently achievement tests are perceived by students as frightening and/or mysterious because of their importance in determining what happens to students during their schooling. We think it is crucial that tests not be used to determine a student's future. All students who take a test should have the results explained to them very carefully, including the deliniation of the limits of the tests.

III. B. QUESTIONNAIRES

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Questionnaires ask people to write answers to written questions. Answers can often be written in the respondent's own words. More often, however, the answers are included as one of a number of choices to be checked by the respondent. Questionnaire responses are used to record opinions, perceptions, and attitudes as well as to collect simple objective information such as "How many students are enrolled in Wilson High School?" Questionnaire scales have been developed by psychologists to measure different personality attributes.

1. Uses:

   - Questionnaires are used to collect specific information that can be written down easily.
   - They can be designed so that numbers can easily be assigned to the information collected. Thus, questionnaires can facilitate easy computation of information.
   - Questionnaires can provide initial information from people which can then be used as the basis for discussion or an interview.

2. Limits:

   - Since there is no built in check when a person is filling in a questionnaire, it is more easy for a person to respond with what he thinks is wanted rather than how he really feels or thinks.
   - Written words are frequently interpreted differently by different people. Since there is no way to check if the person answering the questions means the same thing as the person who designed and is interpreting the answered questions, gross misinterpretation can occur. Studies have been done on the results of questionnaire information by asking the people who filled in the questionnaires what their answers meant. It was found that

what they thought their answers meant were significantly different from what the person who made the questionnaire interpreted their answers to mean.

- Because numbers can be easily given to questionnaire information, it is often thought that questionnaires are more objective than that collected by other means. Unfortunately, the act of simply assigning numbers to information does not indicate how objective the information is.
- The information they provide is limited to written responses which often is inadequate to deal with the complexity of educational and social processes.

3. Costs:

Collecting information by questionnaire is inexpensive compared to other methods. If the questionnaire is standardized, coding and scoring schemes are usually available and also inexpensive to use. Developing coding schemes and analysis of non-standardized questionnaires can be more costly.

4. Suggestions for using questionnaires:

It is essential that the instructions, the questions, and the choice of answers are written clearly and simply. The way to insure this is to sample test the questionnaire before using it formally. Have several people who will not be given the questionnaire; but who are similar to the intended respondents, complete the questions. When they have finished, ask if there were any difficulties in understanding the questions. Then you should go over each question with the trial taker to see if his understanding of the

questions are consistent with the meaning intended. After this trial run, revisions are usually easily made.

The system for collecting and coding the information should be developed simultaneously with the questionnaires. This insures that the questions will provide the information sought and that the answers can be easily treated in analysis.

Your first questionnaires may often be too long and ask for unnecessary information. Sometimes it is good to ask for information that doesn't directly relate to the project because it is cheaper to collect information at one time, rather than to keep going back. Be careful that such extraneous information does not detract from the collection of information that you desire. Generally the shorter the questionnaire, the more informative the response.

III. C. INTERVIEWS

Interviewing techniques are refinements of a common way of collecting information, one person asking questions of another. Interview questions vary from closed to open-ended. A closed question is one which requires a straight forward, informational response, for example, "How many teachers are on the staff of Hi's school?" While an open ended question usually requires a longhier response often about perceptions or opinions, and shapes the next question in the interview, for example, "How is this school different from other schools you have gone to?" "Tell me more about (one of the differences mentioned)."

1. Uses:

- Interviews can collect through oral communication a wide variety of information.
- Interviews are particularly useful to gather in-depth information on personal opinions, knowledge or perceptions.
- While interviews are more costly to administer than questionnaires, they have several advantages over them:
  I. An interview is usually taken more seriously by the respondent, because he is talking to another person rather than filling out a form on paper.
  II. Because the person answering questions can also ask questions to clarify meanings, misunderstandings about meanings are less likely to occur, or are able to be cleared up.
  III. Because the interviewer is directly on the scene he is more likely to pick up additional, useful information from the respondent not covered by the question.

2. Costs

Interviewing is more expensive than either mailing or questionnaires. The greater costs are because:

- The interviewing process itself is time consuming, i.

- Interviewer acquires useful training.
- Collecting and analyzing information is usually more complex.

A. Suggestions for using interviews:

- Selection of people to be interviewed.

Because of the cost of interviewing, a researcher will usually interview only a select number of people from the group he is studying. It is essential that the selection is representative of the larger group, in order for generalizations to be made about the larger group's undertaking. The best method of selecting the people for interview is by random. Two ways this can be done are (1) drawing names out of a hat, or (2) assigning each person in the large group a number. The first people whose numbers are listed in a random number table (available at the back of most textbooks on statistics) are then chosen.

Sometimes a researcher will want to insure that certain subgroups (e.g., boys and girls, or young and old students) are fairly represented in the group to be interviewed. To accomplish this the total group should be first split into the sub-groups and the determination of how many subgroup should then be drawn randomly. The total group to be interviewed will then have the sex or age represented as guaranteed that was desired. Technically this is called stratified random sampling.

- Matching interviewer with interviewee.

Finding interviewers who are similar to the people being interviewed in terms of sex, ethnic background and age will facilitate the interview and provide more information than not matching. Consider (e.g. a) parent to interview parent and student to interview student. If the interview

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thoroughly discussed with program participants and the observor before beginning the observation.

- The observor and participants should be aware of the importance and difficulty of the observer's role and perspective that combines the perspective of the program participant with that of an objective outside perspective. This is achieved in part by the observor starting his work with as few as possible preconceptions about what the important issues are to focus on. After a brief period he should begin to formulate issues which could be discussed with the program participants or with a representative group of participants with whom he is working closely. After discussion of these issues the observor should be asked to lead several feedback workshops on his observations. Effective participant-observation combines careful observation over a significant period of time with constant efforts to clarify or verify his interpretations with the interpretations of the participants.

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IV. ANALYSIS

Once the information is collected, the analysis of the information will determine the quality of the conclusions. Much of the best analysis of new school programs has been done by program participants who have had no formalized training in research. The following suggestions might help:

1. Plan your approach to the analysis. It is often necessary to deviate from your plans due to new considerations and unforseen problems in the data that weren't anticipated. If there is ambiguity or a change in plans during the process, it is important to be able to explain the process by which the conclusions were reached at the conclusion of the analysis.
2. Check to insure that the analysis will yield the information that is wanted.
3. If it makes sense to number the data consider how you are going to use the numbers. In many cases percentages or people responding in one way compared to percentages responding in another is adequate. If the information needs a more sophisticated statistical approach, try to find a person well trained in statistics who is interested in the purposes of the program and who is willing to train a program participant to perform statistical analysis in the future. Any work with a consultant should result with the program participants having greater capability to handle what the consultant was hired to do.
4. When a conclusion is reached about the information carefully recheck the information to see how the conclusion is supported or challenged by the data. Be wary of the limitations of the information and the techniques

gathering that information when you are developing your conclusions.

5. Carefully consider alternative explanations for any pattern that seems to be present in the data. For example, an increase in reading scores explained best by something that happened in the program or by how the students were selected for the program.

6. While simple explanations of data are often the best, remember that the program is a complex set of interrelated activities and personalities. Explanations that isolate one piece of the program are generally weaker than those supported by the context of the whole program.

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V. PRESENTATION

The choice of how to present research conclusions should be based on your audience as well as the purpose for presentation. Usually, research conclusions are presented in a weighty written report. Frequently written reports are required only for program continuation and funding. The format preferred by that agency should be explored. But such reports are not particularly useful for other purposes and other methods of presentation should be considered. The following forms of presentation have been used and might be considered:

1. Articles and brochures. If the purpose of the presentation is to inform others about the program, articles might be written based on part or on the total results of the research. Imaginative use of graphics, illustrations, and/or pictures will aid the effectiveness of the article.
2. Other media. If the purpose of the research is to aid others in the development of new school programs, different visual methods of presentation should be considered such as film, videotape, and slide-tapes. In this case, more emphasis on the process and the descriptions and solutions of the issues and problems would probably be useful.
3. Workshops. If the purpose of the research is to aid the development of the program in terms of decision-making or staff problems and issues in their daily work, the research results should be presented in workshop sessions. It is not sufficient to simply present the findings in written form to program participants. Workshops allow time for consideration, discussions and attempts to figure out the actual implications of the results on the daily life of the program.

VI. PUTTING IT ALL TOGETHER

The following questions are designed to help program planners and participants to think through the research process before it is begun. They also serve to summarize some of the major points of this guide.

1. Why is research wanted?

   1a. Who is it for? What purposes will it serve?

2. What information is desired?
3. Is the information that is desired consistent with the reasons for the evaluation itself?
4. What are the most efficient methods for securing the information desired?
5. How will the information be coded and analyzed?
6. Will the methods for collecting, coding and analyzing the information contribute to the purpose for the evaluation?
7. How will the information be presented, and to whom? Are there more effective ways to present the information other than writing a report? What purposes and audiences do other means of presentation serve?